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EC72-1508 Entomology...Western Bean Cutworm in Nebraska....and its Control

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Western Bean Cutworm in Nebraska...and its Control

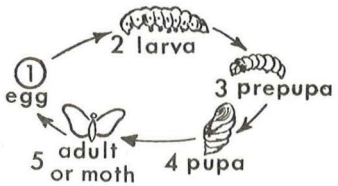
By Arthur F. Hagen and R. E. Roselle[1/]

The western bean cutworm (Loxagrotis albicosta), primarily a pest of field beans in western Nebraska, has recently become a serious pest of field corn in the irrigated areas of southwestern and central Nebraska. The insect has been collected as far east as York. This insect appears to be more damaging to corn grown on sandy soil.

The western bean cutworm, unlike most cutworms, feeds entirely above the soil surface. The young larvae feed on buds, flowers and foliage. As cutworms mature they feed on the developing beans and corn kernels. It is this feeding that causes losses to the grower.

Description

The cutworm passes through five stages of development--egg, larva, prepupa, pupa, and adult or moth.



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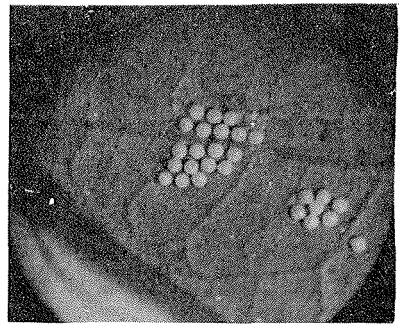
The eggs are slightly smaller than the head of a common pin. They are laid in groups of 5 to 200. When first laid the eggs are pearly white but soon become darker. By hatching time eggs are bluish black. They hatch in about seven days. About 95 percent of the eggs in a group will hatch.



EGGS OF WESTERN BEAN CUTWORM ON UNDERSIDE OF BEAN LEAF.

Cutworms emerging from the eggs are dark brown. As they grow they become lighter in color and by maturity are grey to pinkish brown. The mature cutworm is about 1 1/2 inches long and 1/4 inch in diameter.

The mature larvae burrow into the soil and construct earthen cells. It is within these cells that the prepupal and pupal stages are spent. The prepupae shrink to a-about one-half the size of the mature cutworm. The pupae are dark brown and resemble the pupae of many other cutworms.

The wings of the adult or moth are predominately dark brown. Creamy white stripes and spots occur near the front of the front wings. The hind wings are not distinctly marked and vary from light brown to almost black. Wing expanse is about 1 1/2 inches. The body of the moth is light brown or tan and about 3/4 inch long.

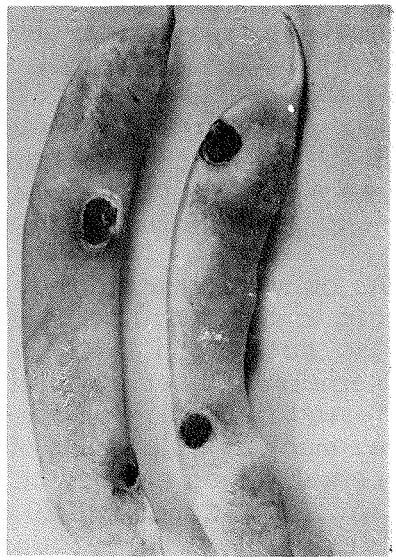
Seasonal History

Moths emerge from the soil early in July and egg-laying soon begins. The cutworms feed until the middle or last of August, with a few continuing to feed until a-bout the middle of September. The mature cutworms enter

the soil, and the winter is spent in the prepupal stage. Pupation occurs in May and early June.

Damage

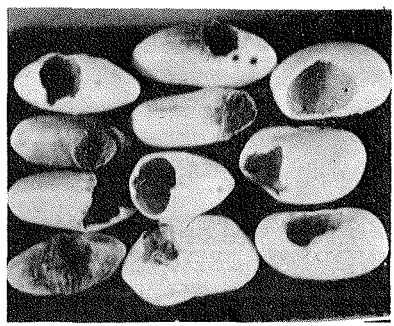
Beans: Eggs are laid on the underside of the leaves and are difficult to find in field examinations. The young cutworms feed on the buds, flowers, and foliage of the bean plants. When the pods form, the cutworm cuts entrance holes and feeds on the developing beans. Although they usually eat only a portion of the bean, they may damage all beans in a pod. Feeding is done at night and on cloudy days. The rest of the time the cutworms can be found in the soil around the plants.



ENTRANCE HOLES IN THE BEAN POD MADE BY THE CUTWORM.

The majority of cutworms are mature and have stopped feeding by bean harvest time. The worms which are not mature at harvest feed on the beans in the windrow.

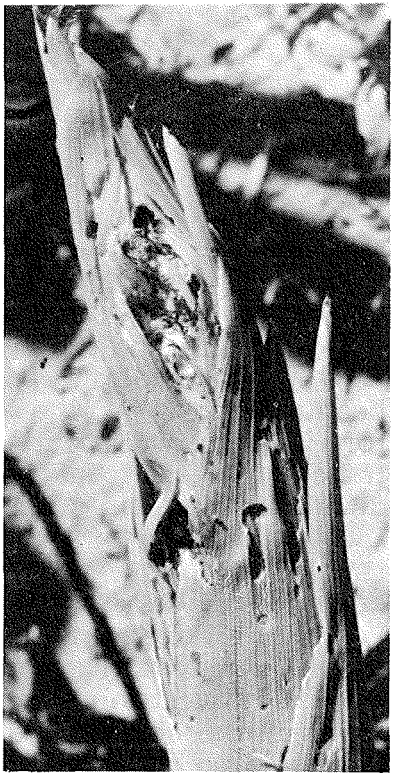
No significant reduction in yield is caused by cutworm feeding. However, it does affect the grade since the amount of damaged beans is considered when grade is determined. A population of two cutworms per square foot is sufficient to cause a reduction in grade.



BEANS SHOWING DAMAGE BY THE CUTWORM.

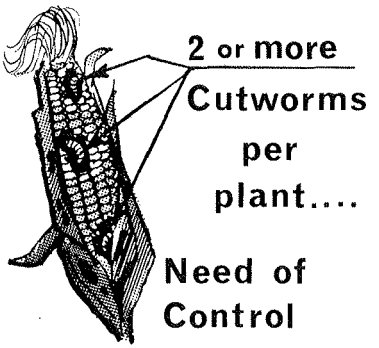
Corn: In corn the eggs are laid on the upper side of the leaves and are fairly easy to find. It depends on the stage of growth of the corn as to where worms go after the eggs hatch. In corn that has not tasseled they will move to the tassel within the whorl and feed on the pollen. In tasseled corn the young cutworms move to the ear and feed on the silk.

As cutworms mature they begin to cut entrance holes in the husks and feed on the kernels. Observation of infested fields has shown that as much as 50 percent of the kernels on an ear may be destroyed. As many as 20 cutworms have been found on one plant and the majority of these were feeding on the kernels. This destruction of kernels by the cutworm may reduce the shelled corn yield by as much as 30 to 40 percent.



SHOT HOLE DAMAGE TO THE HUSKS CAUSED BY WESTERN BEAN CUTWORMS CUTTING ENTRANCE HOLES.

THE WESTERN BEAN CUTWORM FEEDING ON CORN KERNELS. THE DAMAGE IS SIMILAR TO THAT OF THE CORN EARWORM, BUT IS NOT CONFINED TO THE TIP OF THE EAR.



There is only slight reduction in yields of corn intended for ensilage. However, because of kernel loss caused by the cutworm, the quality of the ensilage may be lowered. The exact number of cutworms needed to cause economic damage in corn has not been determined. However, two cutworms or more per plant appears to be reason enough for control.

Control

Beans: The chemicals and rates for control of the western bean cutworm in beans are shown in Table 1. The most effective control has usually been obtained between July 15 and August 1. Treatments applied later will control the cutworm; however, some damage already may have been done to the beans. Light traps operated in the areas where this cutworm is present indicate the population and aid in determining control dates. The information and the need for control obtained by the light traps is available from your county agricultural agent, Experiment Station, or local bean buyers.

Corn: The chemicals and rates that can be used for control of the insect in corn are shown in Table 1. Controls should be applied when there is 1 egg mass or 1 infested tassel per 7 plants. Controls should not be applied to corn fields until about 95 percent of the field has tasseled. No less than 3 gallons of spray per acre should be used when sprayed by airplane. Control can also be applied to fields intended for ensilage (see restrictions on use of chemicals).

Table 1. Recommendations for control of Western bean cutworm in field beans and corn.

Crop	Insecticide and Formulation	Amount Per Acre	Active Ingredient Per Acre
Field beans	Sevin (carbaryl) 80% WP	1.25 lbs.	1.0 lb.
	Thiodan (endosulfan) 2 lbs/gal EC	2 qts.	1.0 lb.
Field corn	Sevin(carbaryl) 80% WP	2.50 lbs.	2.0 lb.

PRECAUTIONS AND RESTRICTIONS

SEVIN: No restrictions on field corn.
No time limitation on beans.

THIODAN: Wait 3 days before harvest.
Do not feed treated threshings to livestock.

CAUTIONS

Pesticides are poisonous chemicals. They can result in personal injury or illegal residues in crops if not used properly. It is very important that the four keys to pesticide safety be used. They are:

1. Read the label on each pesticide container before each use.

2. Store pesticides in their original, labeled containers.

3. Apply pesticides only as directed.

4. Dispose of empty container safely.